Remarks:

Drawings

Figures 3 and 4 have been amended as suggested by including "302" to Figure 3 and "300" to Figure 4.

A corrected drawing sheet is attached hereto.

Specification

The following corrections have been made and a replacement corrected specification is attached hereto.

Page 2, line 20 of the application as filed (now page 2, line 23) "my" has been replaced with --by--.

Page 5, line 19 of the application as filed (now page 6, line 2) --300-- has been added after "substrate".

Objections

Claims 13, 15:

The phrase "between active regions and substrate" is not intended to cover the forming of the isolation region both before and after the active region is formed. The isolation layer is formed prior to forming the active region.

Furthermore, the term "substrate" is used here as commonly used in the art to define the silicon material in and on which the various regions of the device are subsequently built. Thus it is not an epitaxial region that is grown afterward on the substrate. The drawings also illustrate this point by virtue of the numerals along the vertical axis which define the top surface of the substrate material by means of the numeral "0" depicting zero depth.

Claim 13 has been amended to make the location of the isolation layer clearer.

Claim 16:

The active region is one region and the error has been corrected in claim 13. Support for this correction is found on page 3, line 20.

It is to be noted that "snapback device" refers to any device that can go into snapback and come our of snapback without being destroyed. The parameter being improved is the breakdown voltage at which the device snaps back. Snapback devices come in many forms: some architectures such as LVTSCRs are intended for use only in snapback mode, while others such as NMOS devices exist as normal mode devices (which are usually larger when required to handle high currents) and snapback NMOS devices (which are intended to go into snapback and make use of double injection of carriers – these are typically smaller than their normal mode counterparts and often include a drain ballast region). Therefore the term "snapback" in and of itself defines a certain set of devices. The structural elements and method of making these form part of the known art and are not the subject of the invention.

Claim Rejections – 35 USC 102

Claims 10-12 were rejected over Vashchenko '317

It is respectfully submitted that Vashchenko '317 does not make use of a mask with multiple perforations to form a single region. Claim 10 has been amended to clarify that the mask has multiple perforations. This mask with its multiple perforations is used for the formation of a single region, namely the isolation layer.

In contrast in Vashchenko '317 the openings 310, 306 are used for forming two different structures – in other words for any particular structure only one opening is used in the mask to form the structure, which is commonly known in the art.

Also the opening 306 is simply a single opening for making a zener area. Column 7, lines 64-66 and Figure 4A and B simply shown different size zener mask openings not multiple perforation masks.

Claims 11 and 12 depend from claim 10 and therefore include the same limitations that are not found in Vashchenko '317.

Claims 13, 15-16 were rejected over Amaratunga.

Amaratunga makes use of vertical current flow from anode to cathode (column 4, lines 13-28). As a result it requires openings in the p-buried layer (see column 3, lines 14-19 which defines either discrete islands or a layer that stops short of the edges.) Thus it does not define an isolation layer in the sense of the present invention, where the current flow is essentially in a horizontal direction in the active region, and the isolation layer seeks to prevent leakage to the substrate. Nevertheless, claim 13 has been amended to make it clear that the spotted implants are caused to substantially combine to form the isolation region.

Claims 15 and 16 depend from claim 13 and therefore include these distinguishing features.

Claims 13, 14, 16 were rejected under s102(b) over Webb.

As with Amaratunga, Webb the buried regions 42 do not provide isolation since current can still move through the gaps between the discrete regions 42. Thus the amendment to claim 13 which defines the isolation region as a region where the doped islands have combined to form an isolation layer, also distinguishes the claim over Webb.

Claim rejections – 35 USC 103

Claims 17 and 18 were rejected over Webb in view of Jaeger.

Neither Webb nor Jaeger teach or suggest forming spotted implants and causing them to coalesce so as to form an isolation region. In fact, Jaeger proposes annealing to correct surface damage (page 103) – it does not teach or suggest spreading out the dopant of spotted implants so as to form an isolation layer.

In view of the above differences and the amendments to the claims, it is respectfully submitted that the claims are now all distinguishable over the prior art. Early allowance of the claims is therefore requested.

Respectfully Submitted,

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